



info@piwine.com

Mannostab Liquid 200

Specific mannoprotein (MP40 – Patent n°2726284), naturally present in wines, with the unique property of inhibiting potassium bitartrate crystallization.

MANNOSTAB® LIQUIDE 200 is a targeted oenological treatment, based on the inhibition of potassium bitartrate crystallization. It provides a natural, simple solution to the stability requirements of filtered or non-filtered wines.

- A natural constituent already present in wines, **MANNOSTAB® LIQUIDE 200** perfectly conserves the quality of the wine.
- Involving no waste materials, no energy or water consumption, **MANNOSTAB® LIQUIDE 200** is a responsible treatment which complies with new environmental constraints.

Specific yeast cell wall mannoprotein for the stabilization of potassium bitartrate salts in wine. Qualified for the elaboration of products for direct human consumption in the field of the regulated use in oenology. In accordance with the current EU regulation n° 2019/934.

SPECIFICATIONS AND OENOLOGICAL APPLICATIONS **MANNOSTAB® LIQUIDE 200** contains the only mannoprotein naturally present in wine with the ability to stabilize potassium bitartrate salts: MP40. It is enzymatically extracted from yeast cell walls by a patented process (Patent n° 2726284) that preserves and ensures the tartaric stabilization capacity of MP40.

SCIENTIFIC RESULTS Microscopic observation of potassium bitartrate crystal development in the presence and absence of **MANNOSTAB® LIQUIDE 200** shows that **MANNOSTAB® LIQUIDE 200** addition prevents the preferential growth of certain crystal faces, thereby flattening the shape of the crystals. The crystal only grows in a certain orientation, thus preventing it from precipitating.

PHYSICAL CHARACTERISTICS: Aspect liquid; Color dark brown; Density (g/L) 1080; Soluble in water (dark brown color), insoluble in ethanol.

CHEMICAL AND MICROBIOLOGICAL ANALYSES: SO₂ (g /L) 1.5 ± 0.3; Dry residues (%) ≥ 20; Analysis on dry product: Ashes (%)....< 8; Total nitrogen (g/kg)....[5 - 75]; Polysaccharides eq. mannose (g/kg) > 600; Yeast (CFU/g)..... < 10²; Mold (CFU/g)....< 50; Aerobic mesophile bacteria (CFU/g)....<10⁴; Lactic acid bacteria (CFU/g)....< 10⁴; Coliformes (CFU/g)....< 10; E. coli (/25 g)....none; Staphylococcus (/g)....none; Salmonella (/25 g)...none; Heavy metals (Pb) (ppm)....< 30; Lead (ppm)....< 5; Arsenic (ppm)....< 1; Mercury (ppm)....< 0.15; Cadmium (ppm)....< 0.5 • Inhibition of potassium

bitartrate crystallisation. • Treatment organoleptically neutral to the wine. • Naturally present in wine. • Stabilizes white, rosé and red wines; still or sparkling wines; filtered or unfiltered. • No waste, no water or energy consumption.

IMPLEMENTATION • Homogenize the MANNOSTAB® LIQUIDE 200 solution. • For still wines, incorporation should be completed before the last filtration with a dosing pump or an OENODOSEUR on wines already fined and clarified. Make sure the homogenization is perfect. • We recommend incorporating MANNOSTAB® LIQUIDE 200 at least 48 hours before filtration. • For sparkling wines, incorporation of MANNOSTAB® LIQUIDE 200 should be done either during tirage (less stacking risks) or during disgorging (in this case anticipate the filtration of the MANNOSTAB® LIQUIDE 200 solution) in the expedition liqueur.

STORAGE RECOMMENDATION • Store above ground level in a dry area not liable to impart odors. Ensuring stock is kept at a moderate temperature (in frost-free conditions), in its original, unopened packaging. • Optimal date of use: 2 years.
• Do not use opened packaging. PACKAGING 1 L and 10 L can.

PROTOCOL FOR USE OENOLOGICAL CONDITIONS MANNOSTAB® LIQUIDE 200 is the last treatment before bottling (after blending, fining and pre-filtration, etc.). No treatment should be made post MANNOSTAB® LIQUIDE 200 application with the exception of SO₂, Gum Arabic and ascorbic acid. In the case of filtered wines, MANNOSTAB® LIQUIDE 200 should be added between preparation filtration and bottling filtration and at least 48 hours prior to bottling. Filterability of the wine should be tested before and after addition of MANNOSTAB® LIQUIDE 200. Where MANNOSTAB® LIQUIDE 200 addition does not increase the Filterability Index (Clogging Index) of wines prepared to the above specifications (CI < 50), a forced blocking filtration may retain colloids and/or MANNOSTAB® LIQUIDE 200 and may make the treatment ineffective. In the case of non-filtered wines the treatment must be added the day before bottling. Red wine specific case: unstable coloring matter can result in tartrate salts by precipitating over time. Make certain the coloring matter of the wine is stable before treating with MANNOSTAB® LIQUIDE 200 for long term tartaric stability. MANNOSTAB® LIQUIDE 200 will not prevent the neutral calcium tartaric salts precipitation.

DOSAGE The average dosages (between 50 and 150 mL/hL) are determined by stability tests in order to prevent any risks of overdose. Two stability tests can be implemented: • The cold test, easy to implement in wineries. • The mini-contact test, realized in laboratory (DIT, Stabilab® – Patent Eurodia) Tartaric instability degree (%) MANNOSTAB® LIQUIDE 200 Dosage (mL/hL) < 4.8 stable 4.8 to 8 50 8.1 to 11 75 11.1 to 14 100 14.1 to 17 100 - 120 17 to 20 150 20.1 Not stabilizable with only MANNOSTAB® LIQUIDE 200 l'œnologie par nature CS 61 61 – 33072 BORDEAUX CEDEX – Tél. : +33 (0)5 56 86 53 04 - www.laffort.com IMPORTANT: To the extent that the conditions of use are beyond its control, LAFFORT® cannot be held responsible for failure to successful treatment and the appearance of salt crystals of tartaric acid.